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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,442	11/07/2003	Kon-Tsu Kin	KINK3004/EM	9705

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EXAMINER

CHEN, KIN CHAN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/702,442

Applicant(s)

KIN ET AL.

Examiner

Kin-Chan Chen

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

In specification, page 10, in the Table, The symbol for the unit of "average stripping rate" is missing.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Degendt et al. (US 2002/0011257 A1).

In a method for treating a surface of a substrate, Degendt teaches that bubbles with a liquid and a gas may be formed on the surface of the substrate.

The gas bubbles may be allowed to ascend along the surface of the substrate such that the gas bubbles work to strip a substance from the surface of the substrate.

Art Unit: 1765

The substance may be a photoresist or an organic contaminant on the surface of the wafer. See abstract; Fig. 8, [0092]-[0093].

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Muraoka et al. (US 6,696,228 B2).

In a method for treating a surface of a substrate, Muraoka teaches that bubbles with a liquid and a gas may be formed on the surface of the substrate.

The gas bubbles may be allowed to ascend along the surface of the substrate such that the gas bubbles work to strip a substance from the surface of the substrate. The substance may be a photoresist or an organic contaminant on the surface of the wafer. See Fig. 1, col. 11, lines 45-col. 12, lines 18.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Degendt et al. (US 2002/0011257 A1).

In a method for treating a surface of a substrate, Degendt teaches that bubbles with a liquid and a gas may be formed on the surface of the substrate.

The gas bubbles may be allowed to ascend along the surface of the substrate such that the gas bubbles work to strip a substance from the surface of the substrate. The substance may be a photoresist or an organic contaminant on the surface of the wafer. See abstract; Fig. 8, [0092]-[0093]. Degendt teaches that the substrate may be immersed in the liquid contained in a bath as shown in Fig. 8, [0092]-[0093]. Degendt also teaches that the substrate may be not immersed in the liquid as shown in Fig. 3, [0086]-[0089]. Hence, it would have been obvious to one with ordinary skill in the art to use the combination thereof such that the substrate is only partially immersed in the liquid as instantly claimed because both of which have been used and be able to remove the resist and residues.

The limitations of claims 4, 7, and 8 have been addressed above and rejected for the same reasons, *supra*.

As to claim 5, Degendt teaches the rotating the substrate may be applied in the process, [0077] [0079] [0080].

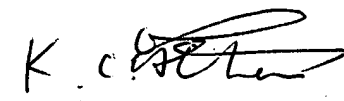
Dependent claim 6 differs from Degendt by specifying a common practice to the art of semiconductor device fabrication, the examiner takes official notice. A person having ordinary skill in the art would have found it obvious to modify Degendt by processing a plurality of substrates simultaneously in order to improve the productivity with a reasonable expectation of success, see Muraoka et al. (US 6,696,228 B2; Fig. 1) as evidence. Furthermore, the duplication of parts and design for processing is merely a matter of choices of design depending on the product / process requirements, it would be obvious to one skilled in the art to duplicate parts and design for processing in order to accommodate the specific production requirement.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kin-Chan Chen whose telephone number is (571) 272-1461. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

Art Unit: 1765

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 29, 2005


Kin-Chan Chen
Primary Examiner
Art Unit 1765